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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,225	09/30/2003	Jean-Philippe De Sandro	543-USA	1601
26031	7590	02/09/2005	EXAMINER	
GEORGE J. PRIMAK 13480 HUNTINGTON PIERREFONDS, QC H8Z 1G2 CANADA			SONG, SARAH U	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

**Office Action Summary**

Application No.

10/673,225

Applicant(s)

DE SANDRO ET AL.

Examiner

Sarah Song

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>0903</u> . | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### *Information Disclosure Statement*

1. The prior art documents submitted by the applicant in the Information Disclosure Statement filed on September 30, 2003 have all been considered and made of record (note the attached copy of form PTO-1449).

### *Claim Objections*

2. Claim 1 is objected to because of the following informalities: in line 6, Examiner believes that "that" second occurrence should be changed to –than–. Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. (U.S. Patent Application Publication 2004/0042759).**

5. Regarding claim 1, Park et al. discloses a large mode field diameter optical fiber which is a single mode fiber having a core and a cladding and wherein the core has an inner core region, at least partially doped with a rare-earth dopant and a co-dopant, and an outer core region at least partially doped with a dopant, the type and amount of the rare-earth dopant and its co-dopant in the inner core region and of the dopant in the outer core region being adapted to achieve a refractive index in the outer core region that is lower than the refractive index of the inner core

Art Unit: 2874

region so as to produce a large mode field diameter, exceeding  $5.5\text{ }\mu\text{m}$  at a wavelength of 1450nm. See Abstract, Figure 4 and Paragraph [0043].

6. Park et al. does not expressly disclose the mode field diameter exceeding  $5.5\text{ }\mu\text{m}$  at a wavelength of 1550nm.

7. However, Park et al. discloses in the Abstract that the optical fiber amplifier may also be doped with Erbium. It is well known in the art that Erbium fiber amplifiers provide amplification at 1550nm, which is well known as a low loss transmission wavelength for optical communications.

8. Therefore, it would have been obvious to one having ordinary skill in the art to provide the fiber of Park et al. with a large mode field diameter exceeding  $5.5\text{ }\mu\text{m}$  at a wavelength of 1550nm (by utilizing an Erbium dopant in the core) in order to reduce coupling losses with single mode transmission fibers as taught by Park et al. (Paragraph [0016]) in the commonly utilized 1550nm transmission window.

9. Regarding claims 2 and 3, Park et al. does not expressly disclose the outer core region to include a plurality of or up to five sub-regions. However, optical fibers having a plurality of sub-regions of the outer core region are well known in the art. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a plurality of sub-regions as claimed in order to optimize the transmission characteristics of the optical fiber.

10. Regarding claims 4-6, Park et al. does not expressly disclose the ratio of diameters, or the relative refractive indices claimed. However, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges and optimum values of a result effective variable involves only routine skill in the art. See MPEP

Art Unit: 2874

2133.05. Therefore, the claimed ranges would have been obvious to one of ordinary skill in the art in order to optimize transmission characteristics.

11. Regarding claims 7-12, Park et al. discloses the dopant to be selected from Er, Yb, Nd, Tb and Tm, and more specifically erbium, a co-dopant selected from Ge or La, and a dopant selected from oxides of Al, Ge, P (Paragraph [0030]-[0031]), but does not expressly disclosed the claimed ranges of the components or the particular co-dopant to be  $\text{Al}_2\text{O}_3$ . However, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges and optimum values of a result effective variable involves only routine skill in the art. See MPEP 2133.05. It has also been held to be within the general skill of a worker in the art to select a known material of the basis of its suitability for the intended use. See MPEP 2144.07. Therefore, the claimed ranges and particular dopants would have been obvious to one of ordinary skill in the art in order to optimize fiber and transmission characteristics.

### ***Conclusion***


12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2874

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sarah Song whose telephone number is 571-272-2359. The examiner can normally be reached on M-Th 7:30am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on 571-272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Sarah Song  
Patent Examiner  
Group Art Unit 2874